

ABSTRACT

A method for transposing data in a plurality of processing elements is comprised of a plurality of shifting operations and a plurality of storing operations. The shifting and storing operations are coordinated to enable data to be stored along a diagonal of processing elements from a first direction or first pair of directions and to be output from the diagonal in a second direction or a second pair of directions perpendicular to the first pair of directions, respectively. The plurality of storing operations are responsive to the processing elements' positions. The first and second pairs of directions are selected from among the dimensions of the array, e.g., the $+x/-x$, $+z/-z$ and $+y/-y$ pairs of directions.